

barrier 22, on or in the liner 64, 164, 264, or on or in any other structure in the article 10. In addition, the barrier highlight 21 is disposed to generally coincide with the location of the active barrier 22. In various aspects, the barrier highlight 21 can overlap the active barrier 22 in the z-direction (perpendicular to the plane formed by the longitudinal and transverse directions 40, 140, 240 and 42, 142, 242). The barrier highlight 21 can partially or completely overlap the active barrier 22. In other aspects, the barrier highlight 21 can appear to adjoin or surround the active barrier 22. In general, “overlies” means that the barrier highlight 21 generally coincides with the active barrier 22 in the longitudinal and transverse directions 40, 140, 240 and 42, 142, 242, but not necessarily in the z-direction. Because of this arrangement, the barrier highlight 21 is enabled to change appearance when the active barrier 22 changes dimensions.

[0143] In various aspects of the present disclosure, the barrier highlight 21 is printed or otherwise disposed between the absorbent assembly 60, 160, 260 and the inner surface of the article 10 such that the barrier highlight 21 is visible from the inner surface of the article 10 either before being wetted, after being wetted, or both. The barrier highlight 21 includes a colorant as described herein. The colorant changes appearance when wetted. The colorant can change from one color to another, from one color to no color, or from no color to a color. Various portions of the barrier highlight(s) 21 need not be identical in their colorants or in the manner each of those portions changes appearance.

[0144] In one aspect of the present disclosure, the barrier highlight 21 is disposed on the liner 64, 164, 264, particularly on an absorbent-facing side of the liner 64, 164, 264. In other aspects, the barrier highlight 21 can be disposed on the absorbent assembly 60, 160, 260, on another structure in the article 10, or on an additional layer of material disposed between the liner 64, 164, 264 and the absorbent assembly 60, 160, 260.

[0145] The colorant used in or as each barrier highlight 21 can include any material that can indicate the desired property when an insult is received. The colorant can include a dye, such as bromocresol green; m-cresol purple; cresol red; chlorophenol red; bromothymol blue; bromopyrogallol red; bromoxylene blue; methylene blue; bromophenol blue; monoazo dyes (such as acid alizarin violet N); monoazo pyrazoline dyes (such as acid yellow 34); diazo dyes (such as acid black 24); anthraquinone dyes (such as acid black 48); amphoteric anthraquinone dyes (such as acid blue 45); triphenylmethane dyes (such as acid fuchsin); phthalein type dyes (such as o-cresolphthalein); xanthene dyes (such as 2',7'-dichlorofluorescein eosin B); heterocyclic acridine aromatics (such as acridine orange); diphenylmethane dyes (such as auramine O); triphenylmethane dyes (such as basic fuchsin); cationic thiazine dyes (such as azure C); cationic anthraquinone dyes (such as basic blue 47); phthalocyanine type dyes (such as copper phthalocyanine); quaternized phthalocyanine type dyes (such as alcec blue); cationic polymethine dyes (such as astrazon orange G); anthraquinone type (such as alizarin); the neutral complex dyes (such as azure A eosinate); the terpene type dyes (such as trans-beta-carotene); and so forth, as well as combinations including at least one of the foregoing dyes. The colorant 40 can also include leuco dyes and related chemistries such as those described in U.S. Patent Application Publication Nos. 2010/0114047 A1 and 2010/0030173 A1, and colorant chemistries such as those described in U.S. patent application Ser. No. 12/825,877, the contents of all of which are incorporated

herein by reference to the extent that they are consistent (i.e., not in conflict) herewith. Desirably, the colorant(s) are U.S. FDA approved.

[0146] The colorant can be encapsulated in a material that is soluble in urine or menses. Suitable urine-, menses-, or water-soluble materials include, but are not limited to, cellulose-based polymeric materials (such as ethyl cellulose); carbohydrate-based materials (such as starches, sugars, and materials derived therefrom, e.g., dextrins and cyclodextrins); and so forth, as well as combinations including at least one of the foregoing materials. When the colorant is contacted by a liquid, the encapsulating material dissolves releasing the dye contained therein. The visual presence of the dye indicates that liquid is present.

[0147] The colorant can alternatively or additionally include one or more materials that can indicate the presence of a substance in or condition of the urine or menses. For example, pH levels in the urine or menses can be indicated by using methyl red, bromthymol blue, and phenolphthalein. The pH range 5 to 9 yields a color gradation from orange to yellow to green to blue. Any combination of the materials described herein can be encapsulated in a urine-, menses-, or water-soluble encapsulant. More than one colorant can be included in any single absorbent article 10.

[0148] In use, an article 10 of the present disclosure includes at least one active barrier 22 and a barrier highlight 21. The article 10 is donned by the wearer with or without the assistance of a caregiver. Upon insult with urine or other body exudates, the active barrier 22 changes dimension to both provide a barrier against leakage, and to provide a physical indication of the presence of liquid in the article 10. In addition, the barrier highlight 21 changes appearance to confirm the action of the active barrier 22 to reassure the wearer or caregiver that the active barrier 22 is working as intended.

[0149] Aspects of the disclosure have been described with reference to various specific and illustrative aspects and techniques. However, it should be understood that many variations and modifications can be made while remaining within the spirit and scope. Accordingly, this is intended to embrace all such alternatives, modifications and variations that fall within the spirit and scope of the appended claims. As various changes could be made in the above constructions and methods, without departing from the scope of the disclosure, it is intended that all matter contained in the above description and shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

[0150] When introducing elements of the disclosure or the preferred aspect(s) thereof, the articles “a”, “an”, “the” and “said” are intended to mean that there are one or more of the elements. The terms “comprising,” “including,” and “having” are intended to be inclusive and mean that there can be additional elements other than the listed elements.

We claim:

1. An absorbent article for preventing leakage of a liquid insult, the article comprising:

- an outer cover, a liner, and an absorbent assembly disposed therebetween, the liner having a body-facing surface;
- an active barrier disposed between the liner and the outer cover, wherein the active barrier is in fluid communication with the absorbent assembly, and wherein the active barrier is adapted to change dimensions when wetted; and
- a barrier highlight disposed to overlie the active barrier, wherein the barrier highlight is in fluid communication